Castlemaine Naturalist

December 2020

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Monthly newsletter of the Castlemaine Field Naturalists Club Inc.

Caladenia colorata, SW Victoria, on a rare orchid search with Noushka Reiter. *Photo: Euan Moore*

Saving orchids from extinction: the RBGV Orchid Conservation Program - Dr Noushka Reiter

Agricultural and land use and management practices introduced to Australia over the past 250 years, in combination with climate change, are wreaking havoc on the populations and survival of many native orchids. At our November meeting Dr Noushka Reiter, a Senior Research Scientist from the Royal Botanic Gardens Victoria (RBGV), gave an inspiring presentation on the work she and others are doing to save native orchids from extinction. Working with colleagues, including those from similar interstate programs, many volunteers and various government, industry and tertiary institutions, RBGV runs an orchid conservation program focussing on threatened species, comprising research, propagation, translocation and site management.

Pterostylis basaltica, the Basalt Greenhood, with its gnat pollinator. Known from a single roadside on the Victorian Volcanic Plains. *Photo: N Reiter*

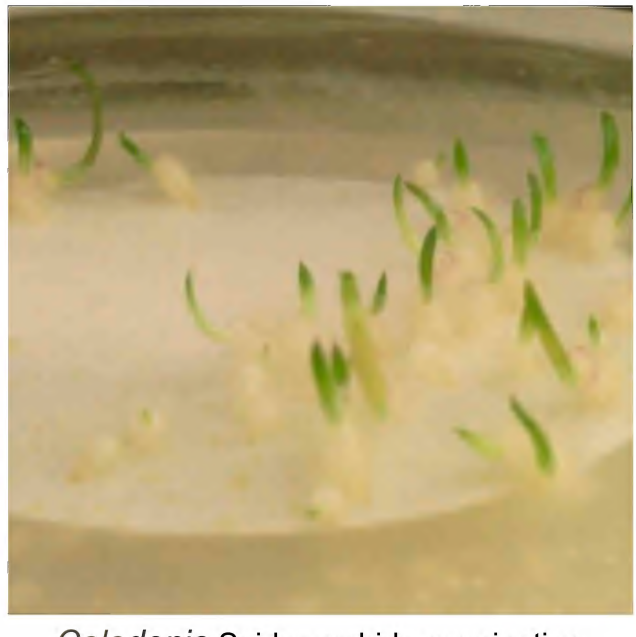
Noushka told us that there are 1,319 Australian plant species at risk of extinction; 37 species have already become extinct on 'our watch'. Sadly, 17% of all threatened plants in Australia are orchids, more than any other plant family. The RBGV orchid conservation program has propagated over 20,000 plants from 165 orchid species, resulting in many successful translocations, all with a high survival rate. This outcome has been achieved through careful analysis of the specific conditions each species needs to survive and thrive.

Apart from the obvious factors of habitat, soil type and weed infestation, one of the main reasons so many orchids are under

threat is that they have a complex dependency or association with a limited number of pollinators and with mycorrhiza (a fungus which grows in association with the roots of a plant in a symbiotic relationship). For example, *Caladenia formosa* is only pollinated by one species of wasp, and seeds require a particular mycorrhizal fungus to be present where they land. Another highly endangered species, *Pterostylis basaltica*, is pollinated through sexual deception by just one of five families of fungus gnat.

Given its importance, it was not surprising to learn that the RBGV's research has led to a greater understanding of the symbiotic relationship of mycorrhiza with orchids, including the necessity of tailoring mycorrhiza to specific species. One research project led by Noushka isolated and identified fungi from 127 Caladenia species, and then tested the ability of the fungal isolates to support germination and plant growth. While most of the Caledenia species were found to each associate with only one type of fungus, many of them shared the same fungus and these fungi were geographically widespread, aiding translocation efforts.

Noushka and her team at the RBGV have now worked out how to propagate several threatened orchid species in the laboratory and are successfully reintroducing them back into the wild at sites where the required pollinators are known to exist. Translocations to date include: 448 *Caladenia hastata* plants (fewer than 379 individuals were known in the wild) introduced to two sites, with a 70% survival rate; 798 *Caladenia versicolour* plants (fewer than 600 in the wild) introduced to three sites, with 88% survival, 47% flowering and 30% pollination; and, 900 *Caladenia colorata* plants (fewer than 600 plants in the wild), with 80% survival and 580 recruits now setting seed.



Caladenia Spider-orchids germinating with their mycorrhizal fungi in petri dishes in the RBGV laboratory. *Photo: N Reiter*

RBGV determines which species to concentrate on by considering threat status. While a number of critically endangered species are now being propagated, their preference would be to start working on species before they get to that stage, that is, fewer than 1,000 known plants. This would provide a better gene pool and higher chance of success. When plants get down to two, say, the conservation challenge is horrendous.

There are a number of ways individuals can participate in the RBGV conservation program. One is to make a donation – this is critical to their work. Another is to visit the greenhouses in Cranbourne – if you want to do this, early September is the best time to see the orchids in bloom. RBGV is also seeking volunteers for a pollinator project, aiming to determine which species pollinate particular orchids. Participants will work to specific guidelines to ensure that monitoring occurs at the right times and places, and they will need to be very patient!

If you would like to explore the RBGV's orchid conservation program further, or Noushka's work more broadly, a good place to start is her website, https://www.rbg.vic.gov.au/staff/noushka-reiter, where you will find details of her publications. In addition, the CSIRO publication "*Recovering Australian Threatened Species: A book of hope*", includes a chapter on a 10-year orchid conservation project Noushka was involved with, as well as chapters on other Australian conservation work.

Cathrine Harboe-Ree

The Seldom Seen Slender Mint-bush

Frances Cincotta

I've led a monthly bushwalk for 20 years exploring all the local tracks within half an hour's drive from Newstead so it is not often I come across a plant I haven't seen before. On 18th November 2020 I found a population of 30+ individuals of *Prostanthera saxicola var. bracteolata* (Slender Mint-bush) which is rare in Victoria. The plants are a range of heights from 30cm to 1m tall and were in full flower (lilac) when I walked by, otherwise they would not have stood out and grabbed my attention.

The location is 4km SE of Maldon township, not far south of the Maldon-Castlemaine tourist railway line, in Maldon Historic Reserve. I don't have a GPS but it is easy to find, as it grows on a named track, Spur Track, approx 300m SE of the intersection of Spur Track and Gower Track (sometimes spelled Gowar). I found only one plant on the north side of Spur Track, all the rest being on the south side of the track and they are all on a little rise in the landscape.

Prostanthera saxicola var. bracteolata, Slender Mint-bush. Whole shrub 60cm tall, and close-up of flowers, Spur Track, Maldon Historic Reserve.
Photo: Frances Cincotta

I took photos and sent these images to Neville Walsh at the Herbarium in Melbourne and he concurs with my identification. The Castlemaine Plant List has it listed as occurring in the Smiths Reef area and in South Mandurang.

Two days later Bronwyn Silver and I went for a walk in the southern end of Castlemaine Diggings Heritage National Park and who should we see? Two more Slender Mint-bush plants! Both are on same (south) side of Wewak Track, not right on the edge but about 5m into the bushland. It is in the Glenlyon district, Shire of Hepburn. If you start at the west end of Wewak

Track, where it comes off Porcupine Ridge Rd and go 800m along Wewak Track traveling SE and crossing Sebastopol Creek, the first specimen is on the right, and the second is 100m further along, and then it is 100m further to the intersection with Loop Track. So both specimens are in the 1km stretch of Wewak Track that is between Porcupine Ridge Rd and Loop Track, south of Sebastopol Creek.

As there are now two locations to find this plant in our district I think it is worth an entry on the Castlemaine Flora website https://castlemaineflora.org.au. I wonder how such small, isolated populations survive? They are about 25km apart as the raven flies.

Nature Notes – December 1942

George Broadway

Specimens sent in by readers of "Wildlife" magazine in December 1942. In this issue there was a reference to the war for the first time. It was referring to the difficulties being experienced because of wartime shortages of items like film.

It is interesting to note how often the same specimens keep cropping up; did this mean that the readers had not read carefully previous issues?

Insects

Ormond: The silk was probably a blanket for the young of a spider, difficult to be sure. The "fly" was the male of a Casemoth. The wings are small and unmothlike, but the body is long and slender resembling some kinds of fly. They are swift fliers.

Healesville: Very large yellow and black Crane fly, one of our largest flies.

Sunbury: Crane fly. Long slender legs and lacy wings. The larvae live in the soil feeding on the roots of grasses and other plants.

Glen Iris: The insect on the rose bush was one of the more delicately proportioned miniature grasshoppers of the long-horned Family *Tettigoniidae.* Mantids are carnivorous and have the forelegs adapted to grasping prey.

Merlynston: Quite a collection, most of which are not harmful but useful.

1. Daphne Scale; not useful. Controlled by painting the leaves with very thin starch paste. It suffocates the insects and as it dries it flakes off taking the dead bodies with it.
2. Yellow and black banded small fly is/was a Hover Fly whose larvae feed on aphis and similar.

3. Fly with long stout hind legs was a Soldier Fly, also a pest eater.
4. Long slender insect with a tail. An Ichneumon Fly. The long "tail" is an ovipositor used for placing eggs in caterpillars which are then eaten by the larvae.
5. Yellow and black crawling creature, the larva of a Ladybird beetle, principal food, aphis.
6. Male and female of a fly which parasitizes the eggs of other harmful insects.

Hawthorn: The specimens from "up north" were some very brightly coloured plant bugs. I once took a handful thinking they were beetles and could not get rid of the smell for days.

Lorne: A Grass Casemoth. One of the Casemoth group which in this case lives on grass and decorates its case with grass.

Sandringham: Native bees, not the ordinary honey-bee.

Kew: Larva of the Clothes-moth. There are three kinds in Australia, all introduced.

Glen Iris: Cockroach, not one of the type that infests houses, probably from firewood. If there are only one or two you don't have a problem.

Mooroopna: Caterpillar of the Vine Hawk Moth, a grape vine pest.

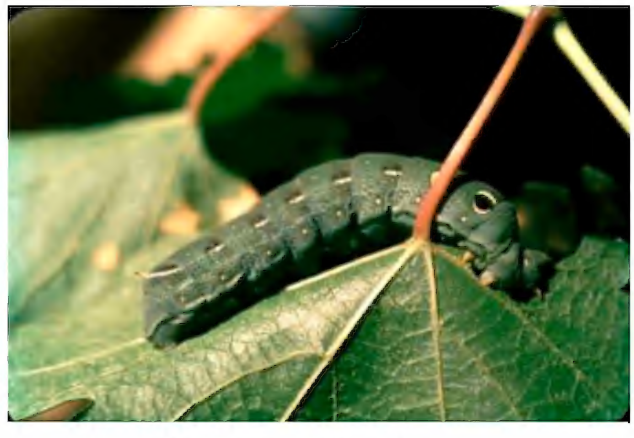
Glenorchy: Bogong Moth, the larva is one of the "cutworms" which cut through the stems of grasses and crops. Gather in enormous numbers, e.g. on Mt Bogong and were utilized by the natives as a nutritious food.

Robinvale: Brown Hawk Moth. The larvae feed on various native plants.

Portsea State School: Large Light-grey Elephant Beetle, *Leptops hopei*. Notorious as a root borer attacking apple and other trees. A giant of the weevil family.

Vermont: By the time it arrived it was a cocoon. It was a Cup-moth notorious for defoliating gum trees (*GB: as we have seen in this area in recent years*).

Mornington: Phasma, one of our largest insects, sometimes called a "Walking-stick Insect" because of the resemblance to sticks and twigs. A plant eater but unlikely to occur in sufficient numbers to do much damage.



Vine Hawk Moth larva.
Photo: George Broadway

Elephant Beetle (Weevil).
Photo: George Broadway

Black Rock: Black and white Vine Moth, its caterpillars are a pest of grape vines.

Chillingollah: Eggs of a brown moth which like the better known Painted Apple Moth has a wingless female which produces a flimsy cocoon then lays its eggs on the outside.

Tennyson: Vegetable Weevil, identified by the two diagonal short lines near the hind end.

Vine Moth adult. *Photo: George Broadway*

Roadside Cleanup Report

Geoff Harris

The large collection of roadside rubbish!

Our second roadside cleanup for the year took place on Monday 16th November and, as expected after a COVID-enforced break of eight months, there was plenty of rubbish, about twice as much as usual. Interestingly, a new category of rubbish has appeared - many single-use face masks are being discarded on the roadside. There was a good display of spring natives in flower including lots of Sticky Everlasting (*Xerochrysum viscosum)* and Loose-flowered Bush-pea (*Pultenaea laxiflora),* as well as *Chocolate* Lilies *(Arthropodium strictum),* Wiry Buttons (*Leptorhynchos tenuifolius),* Tall Bluebells *(Wahlenbergia stricta),* Milkmaids (*Burchardia umbellata),* Black-anther Flax-lily *(Dianella revoluta)* and Cherry Ballart (*Exocarpos cupressiformis)* with ripe berries for the taking. Thanks to Jeremy, Nigel, Peter, Geraldine and Sue for your help.

Nigel Harland - Birds of Sutton Grange, November 2020

Horsfield's Bronze Cuckoo	Superb Fairywren	Red-browed Finch
White-browed Scrubwren	Australian Magpie	Australian Raven
Black-faced Cuckooshrike	Yellow-tufted Honeyeater	Sulphur-crested Cockatoo
Long-billed Corella	Crimson Rosella	Striated Pardalote
New Holland Honeyeater	Welcome Swallow	Red Wattlebird
Yellow-faced Honeyeater	Rufous Whistler	Galah
Grey Shrikethrush	Laughing Kookaburra	Magpie Lark
Red-rumped Parrot	Fairy Martin	Boobook Owl
European Goldfinch	Eastern Rosella	Musk Lorikeet

Observations

Ticks on birds - Damian Kelly

My investigations all started by chance when I enlarged a photo of a Rufous Whistler and noticed what appeared to be a tick on the cheek (see photo above). A review of the literature was most interesting.

Studies in South Australia of more than 1200 birds from a range of species and sites have found that the most common tick is *Ixodes hirsti* (Hirst's marsupial tick). This species is known to infest a range of native animals as well as birds. It also infests domestic animals such as dogs and cats. Like all 243 species of *Ixodes,* it is a three-host tick (adult, larvae, nymph). Adult male and female *I. hirsti* infect mammals, whereas the nymphs, and particularly the larvae, infect birds. So far no research has been done on the impact of larval and nymphal *I. hirsti* on their bird-hosts.

Surprisingly, in the S.A. study, 27% of all birds examined had one or more ticks. Not surprisingly, larger birds tended to have more ticks. Only the Superb Fairywren and Eastern Spinebill had no ticks, whilst New Holland Honeyeaters had a prevalence of 53% with at least one tick. White-browed Scrubwrens had a 67% infection rate and Singing Honeyeaters were even higher with 85%. Perhaps not surprisingly, aerial species such as the Dusky Woodswallow and the Welcome Swallow had very low infestations.

The only Whistler with enough samples was the Golden Whistler with 45%. So far there is little evidence on tick prevalence on Rufous Whistlers, but based on observed patterns it is likely that what I observed is not all that unusual.

Lots more information on ticks can be found here:

Ticks of Australia: http://www.alanrwalker.com/assets/PDF/ticks-of-australia-2014.pdf

The prevalence and intensity of tick infestation in passerines from South Australia, by Margot Oorebeek & Sonia Kleindorfer
Emu 109(2):121-125, 2009; https://doi.org/10.1071/MU08052

Muckleford Station Walk Bird List

Phillip West from Birdlife Melbourne did the Muckleford Station Walk (Damian Kelly's Castlemaine Bird Walks, p.112) on the 14th of November from 6.50am to 9.15am, and saw the following birds:

Willie Wagtail	White-faced Heron	Australian Magpie
Red Wattlebird	Little Raven	Eastern Rosella
Superb Fairywren	Grey Shrikethrush	Little Pied Cormorant
Fairy Martin	Magpie-lark	Masked Lapwing
Welcome Swallow	Goldfinch	Australian Grebe
Restless Flycatcher	Striated Pardalote	Australian Pipit
Black-faced Cuckooshrike	White-plumed Honeyeater	Horsfield's Bronze-cuckoo
Common Bronzewing	Rainbow Bee-eater	Pacific Black Duck
Red-rumped Parrot	White-browed Babbler	Galah
Fuscous Honeyeater	Yellow-rumped Thornbill	White-necked Heron
House Sparrow	White-browed Scrubwren	Rufous Songlark
Common Myna	Dusky Woodswallow	White-winged Chough
Sulphur-crested Cockatoo	Black Fronted Dotterel	

Phillip thought that CFNC members would be interested in these observations.

Cathrine Harboe-Ree

From Rosemary and Peter Turner – Muskies antics!

Since our *Eucalyptus leucoxylon rosea* started flowering prolifically, we have a chorus of Musk Lorikeets from dawn to dusk above us. Not just feeding - they often seem to be checking each other out with these tail-flaring antics - prior to pair bonding?

Musk Lorikeets tail flaring. *Photo: Peter Turner*

From Judy and Phil Hopley

We recently enjoyed a visit from Richard Piesse who was keen to view some of the orchids still flowering in the bush around Maldon. We met up with Maldon local and native orchid expert, David Elliott and his friend Stan, who was also on his first trip out of Melbourne for many weeks!

First stop was the eastern side of Mt Tarrengower where the last of a group of thirty of more Scented Leek Orchids (*Prasophyllum* sp. affin *odoratum)* were still flowering. Just below were a large patch of Mantis Orchids (*Caladenia tentaculata*) where seed had been sown by David a few years ago. Further up the Mount more Mantis orchids were on display. From there we proceeded to the Maldon-Newstead Road and a site in the Maldon Historic Reserve where we observed Large Rustyhood (*Pterostylis maxima*) in flower. Then on to our final stop off the Red, White and Blue Track in the Muckleford Forest where more Large Rustyhood (*Pterostylis maxima*) were found.

A lovely excursion with friends who haven't had the freedom we locals have had to search the bush for orchids in what has been a wonderful year for all our wildflowers!

Scented Leek Orchid (*Prasophyllum* sp. affin *odoratum)*
Photo: Judy & Phil Hopley

Large Rustyhood (*Pterostylis maxima*)
Photo: Judy & Phil Hopley

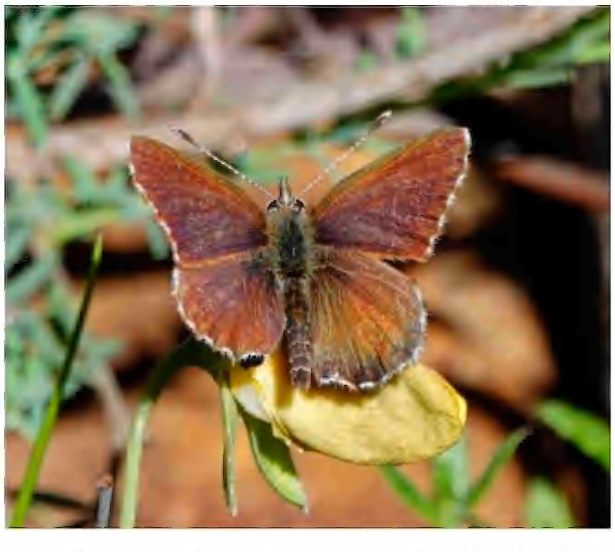
From Peter Turner

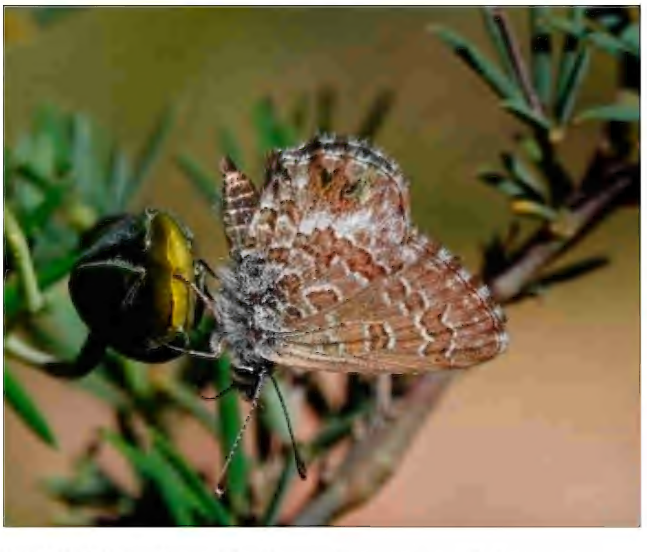
During a loop walk on 25th November with U3A Bush Walkers, starting along the Humbolt Track, there were still many flowering plants. The standout were many patches of Trailing Podolobium (*Podolobium procumbans).* Also noted were the remnant Tree Ferns along Kangaroo Creek.

Trailing Podolobium (*Podolobium procumbans),* Humbolt Track
Photo: Peter Turner

Remnant Tree Ferns along Kangaroo Creek
Photo: Peter Turner

From Euan Moore





Fringed Heath-blue Butterfly (*Neolucia agricola*), Vaughan Springs. L upper, R Lower.
Photos: Euan Moore

From your Committee

The Committee has supported an application by Connecting Country to a new Parks Victoria Volunteering Innovation Fund for development of a **bird walk along part of Forest Creek track**, to encourage public awareness of birds and their importance in monitoring habitat health.

Regional Victorians Opposed to Duck Shooting organised a full-page advert in *The Age* on Sunday 15th November, supported by a large number of organisations including Castlemaine and other FNCs. The Committee agreed to contribute $200 to the cost.

A **Victorian Deer Control Network** is under consideration, given concerns about the damage the growing feral deer population is causing to the environment. While we do not feel CFNC should be involved with deer control, members are encouraged to report any sightings of deer in our region (email to castlemainefnc@hotmail.com.au).

At our next committee meeting in January, we will get the **program for 2021** well underway. Suggestions for guest speakers, topics and other activities are always welcome. At this stage we do not know whether, and under what conditions, we will be able to meet at the Uniting Church, or whether online meetings will continue. However, one way or the other we will continue to hold informative monthly talks and share our interesting observations. We expect that Excursions should be possible in the new year subject to COVID restrictions at the time.

Invasive Needle Grass – can you help?

Several species of invasive Needle Grass are now seeding at a number of sites around Castlemaine including the Botanic Gardens. It is important that they are removed before mowing and seeds disperse.

If you can help with weeding out these grasses, please **contact Margaret Panter on 5470 5072 (7am-7pm)**. Margaret will guide you through the identification of the Needle Grass species and their distinction from native grasses.

Chilean Needle Grass
(*Nassella neesiana)*
Photo: Peter Turner

More information on Needle Grasses and their identification can be found on the Connecting Country website: https://connectingcountry.org.au/now-is-the-time-to-find-needle-grasses-volunteer-opportunity-in-castlemaine/

Disclaimer: The opinions expressed in this newsletter are those of the contributors and not necessarily those of the club

Castlemaine Field Naturalists Club

COMING EVENTS

Friday Dec 11, 7.30pm: MEMBERS' NIGHT – ONLINE VIA ZOOM

This is an opportunity for Members to share an item of their choice with others. Send your short report, poem, photo or slideshow to Euan Moore (calamanthus5@bigpond.com) before the meeting. Euan will arrange for the screen sharing of each item, while you talk us through your story.

If you have registered for our previous sessions, you will be sent the link for registering with Zoom. If you have not joined earlier webinars and wish to attend, please email Peter Turner at munrodsl@iinet.net.au

Tuesday Dec 15, 5.30-7.00pm: PICNIC IN THE BOTANIC GARDENS

Join us for an end-of-year picnic in the Castlemaine Botanic Gardens. To comply with COVID-19 restrictions, BYO-food, drinks, chair, table (if needed). We will meet on the lawn in the northern end of the gardens, so park in the northern car park, Downes Rd. Follow the signs to the CFNC picnic site from the car park.

After our picnic, George will show us around some of the wonderful 'significant' trees in the gardens.

2020 COMMITTEE

President:	Vacant	
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Treasurer:	Geoff Harris	0418 392 183
Newsletter Editors:	Noel Young 5472 1345, Jenny Rolland 0400 565 092	
Committee:	George Broadway	5472 2513
	Euan Moore	0407 519 091
	Richard Piesse	0448 572 867

Club website (Webmaster: Ron Wescott) http://castlemainefnc.wordpress.com/

MEMBERSHIP

Membership forms (available from the CFNC website) can be mailed with cheque to the Treasurer, or completed with details of direct payment into the CFNC account (details on the renewal form), or scanned and mailed or emailed to castlemainefnc@hotmail.com

Subscriptions for 2020

Ordinary membership: Single $35, Family $50
Pensioner or student: Single $25, Family $30
Subscription includes postage of the monthly newsletter, Castlemaine Naturalist

NEWSLETTER

Deadline for the February 2021 "Castlemaine Naturalist": **29th January**
Email newsletter material to: **newsletter.cfnc@gmail.com**